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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,238	06/25/2002	Claymens Lee	8868-US-PA	6388

31561 7590 12/12/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

FERRIS, DERRICK W

ART UNIT PAPER NUMBER

2616

DATE MAILED: 12/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/064,238		LEE, CLAYMENS	
	<b>Examiner</b>		<b>Art Unit</b>	
	Derrick W. Ferris		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 15 and 16 is/are rejected.
- 7) ☒ Claim(s) 6 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/1/2006 has been entered.

### *Response to Arguments*

2. This Office action is in response to applicant's paper filed 4/26/2006. **Claims 1-16** as amended are still in consideration for this application.
3. Examiner **withdraws** the anticipated rejection to *Farhang-Boroujeny et al.* As such, please find a new rejection(s) for the claims as necessitated by amendment.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 1-5, 7-13, 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,757,385 B1 to *Ehrenstrale et al.* ("*Ehrenstrale*") in view of U.S. Patent No. 4,956,838 to *Gilloire et al.* ("*Gilloire*").

As to **claim 1**, see e.g., figure 2 of *Ehrenstrale*. In particular, an N times divide frequency sampling operation is taught as part of the down sampled filter banks 21 and

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32 shown in more detail in figure 3 (see also step 92 in figure 9). In particular, note that positive integer N is taught as K. The echo canceller is taught as the dotted box in figure 2 (see also steps 94-98 in figure 9). Applying an N times multiply frequency sampling operation is taught between COMPL CONJ 27 and S 25 shown e.g., in figure 4 (see also step 93 in figure 9). The filter operating onto the multiplied frequency data list is further taught as S 25.

*Ehrenstrale* is silent or deficient to the further limitation that filter S25 is a low pass filter.

*Gilloire* teaches the further recited limitation above at e.g., column 6, line 49-63.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Ehrenstrale* by clarifying that it is well known in the art to implement synthesized filter banks using low pass filters with coefficients.

As such, the examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to filter low pass signals. In particular, *Gilloire* cures the above-cited deficiency by providing a motivation found at e.g., column 6, line 49-63.

As to **claims 2-3**, see e.g., column 2, lines 23-54 where the reduction is based on K.

As to **claim 4**, the echo canceller cancels both near and far end signals.

As to **claim 5**, see similar rejection to claim 1 with respect to the low pass filter.

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As to **claim 7**, see e.g., figure 2 where a transceiver is taught.

As to **claim 8**, see e.g., column 6, lines 16-38 with respect to FIR.

As to **claim 9**, see similar rejection to claim 1. In addition, near end cross talk cancellation is taught e.g., as Xnear.

As to **claim 10**, see similar rejection to claim 2.

As to **claim 11**, see similar rejection to claim 3.

As to **claim 12**, see similar rejection to claim 4.

As to **claim 13**, see similar rejection to claim 5.

As to **claim 15**, see similar rejection to claim 7.

As to **claim 16**, see similar rejection to claim 8.

6. **Claims 1-5, 7-13, 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,396,872 B1 to *Sugiyama* in view of U.S. Patent No. 4,956,838 to *Gilloire et al.* ("*Gilloire*").

As to **claim 1**, see e.g., figures 1 and 17 of *Sugiyama*. In particular, an N times divide frequency sampling operation is taught as part of the down sampled filter banks 50, see e.g., columns 1 and 2. In particular, note that positive integer N is taught as K. The echo canceller is taught as the dotted box for the subband adaptive filters 60. Applying an N times multiply frequency sampling operation is as upband filters 70. The filter operating onto the multiplied frequency data list is further taught as e.g., SFB 8.

*Sugiyama* is silent or deficient to the further limitation that SFB is a low pass filter.

*Gilloire* teaches the further recited limitation above at e.g., column 6, line 49-63.

The proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Sugiyama* by clarifying that it is well known in the art to implement synthesized filter banks using low pass filters with coefficients.

As such, the examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the above limitation. In particular, the motivation for modifying the reference or to combine the reference teachings would be to filter low pass signals. In particular, *Gilloire* cures the above-cited deficiency by providing a motivation found at e.g., column 6, line 49-63.

As to **claims 2-3**, see e.g., column 2, lines 12-52 where the reduction is based on K.

As to **claim 4**, the echo canceller cancels both near and far end signals.

As to **claim 5**, see similar rejection to claim 1 with respect to the low pass filter.

As to **claim 7**, see e.g., figure 1 where a transceiver is taught.

As to **claim 8**, see e.g., column 1, lines 49-55 with respect to FIR.

As to **claim 9**, see similar rejection to claim 1.

As to **claim 10**, see similar rejection to claim 2.

As to **claim 11**, see similar rejection to claim 3.

As to **claim 12**, see similar rejection to claim 4.

As to **claim 13**, see similar rejection to claim 5.

As to **claim 15**, see similar rejection to claim 7.

As to **claim 16**, see similar rejection to claim 8.

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***Allowable Subject Matter***

7. **Claims 6 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571)272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
DWF

Derrick W. Ferris  
Examiner  
Art Unit 2616

  
DERRICK W. FERRIS  
PRIMARY PATENT EXAMINER